

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/943,215	PANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Anne R. Kubelik	1638	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to response of 11 August 2003.
2.  The allowed claim(s) is/are 95-102, 104-106, 108, 110-122, renumbered 2-8, 11-24, 9-10, 25-26 and 1, respectively.
3.  The drawings filed on 03 January 2002 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some\*    c)  None    of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.
5.  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - (a)  The translation of the foreign language provisional application has been received.
6.  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8.  CORRECTED DRAWINGS must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1)  hereto or 2)  to Paper No. \_\_\_\_\_.
  - (b)  including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the Examiner.
  - (c)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)         |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____    | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                 |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance           |
|  | 9 <input type="checkbox"/> Other   |

*Examiner's Amendment*

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Goldman on 31 October 2003.

Claims 93, 107 and 109 were cancelled without prejudice.

In claims 95-96, 98, and 100, line 2, "93" was replaced with --122--.

In claim 95, line 1, "system" was replaced with --vector--.

In claims 100 and 116, "transformed with" was replaced with --comprising--.

Claim 102. (Amended) A DNA construct comprising in operable linkage:

a single promoter sequence;

a [fragment of a] first DNA molecule which has a length that is insufficient to independently impart [a desired trait] resistance to papaya ringspot virus to plants transformed with said [fragment of the] first DNA molecule, wherein [the fragment of] the first DNA molecule is [derived] from a DNA molecule encoding a papaya ringspot virus coat protein and is at least 110 nucleotides in length;

a second DNA molecule [effective to achieve post-transcriptional gene silencing of said fragment of the first DNA molecule], wherein the second DNA molecule is coupled to [said fragment of] the first DNA molecule, wherein the second DNA molecule is at least 400

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nucleotides in length, wherein [and said fragment of] the first DNA molecule and the second DNA molecule collectively achieve post-transcriptional silencing of papaya ringspot virus coat protein and impart [the trait] resistance to papaya ringspot virus to plants transformed with said DNA construct; and wherein the single promoter sequence effects transcription of the first DNA molecule and the second DNA molecule; and

[a single promoter sequence which effects transcription of the fragment of the first DNA molecule and the second DNA molecule; and]

a single termination sequence which ends transcription of [the fragment of] the first DNA molecule and the second DNA molecule.

In claim 105, line 2, "said fragment of the" was deleted and "combinations" has been replaced with --combination--.

In claim 106, line 2, "the DNA construct has been modified so that said fragment of" has been deleted.

In claim 108, line 2, "the fragment of" was deleted.

In claim 118, line 3, the first "the" was replaced with --a-- and "93" was replaced with --122--.

In claim 120, line 3, the first "the" was replaced with --a--.

Claim 122 (New). A DNA construct comprising in operable linkage:

a single promoter sequence which effects transcription of a plurality of DNA molecules;

a plurality of DNA molecules each of which is at least 110 nucleotides in length and at least one of which is of a length insufficient to impart resistance to papaya ringspot virus

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to plants transformed therewith[, wherein at least one of the DNA molecules is] and is from a DNA encoding papaya ringspot virus coat protein, wherein the plurality of DNA molecules collectively are at least 510 nucleotides in length, and wherein the plurality of DNA molecules effect post-transcriptional silencing of papaya ringspot virus coat protein and impart resistance to papaya ringspot virus in plants transformed with said DNA construct; and

a single termination sequence which ends transcription of the plurality of DNA molecules.

IN THE ABSTRACT:

The present invention is directed to a DNA construct comprising a first DNA molecule having a length insufficient to independently impart resistance to papaya ringspot virus to plants transformed with said first DNA molecule, wherein the first DNA molecule is from a DNA molecule encoding a papaya ringspot virus coat protein and is at least 110 nucleotides in length. The construct also comprises a second DNA of at least 400 nucleotides in length, which is coupled to the first DNA molecule so that the first and second DNA molecules collectively achieve post-transcriptional silencing and impart resistance to papaya ringspot virus. Alternately, the DNA construct can comprise [having] a plurality of [fragments of trait] DNA molecules each of which is [at least some of which have a length that is independently insufficient to impart that trait to plants transformed with that trait DNA molecule. The fragments of trait DNA molecules are] at least 110 nucleotides [in length but are less than a full-length cDNA. At] and at least one of [the trait DNA molecules is derived] which is from a DNA encoding a papaya ringspot viral coat protein and [. A single promoter sequence and a single termination sequence effect and end transcription in the DNA construct. The present invention

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also related to a DNA construct that includes a fragment of a trait DNA molecule and a silencer DNA molecule. The fragment of a trait DNA molecule has a length that] is insufficient in length to independently impart resistance to papaya ringspot virus to plants. [to impart a desired trait to plants transformed with the trait DNA molecule. The fragment of a trait molecule is derived from a DNA molecule encoding a papaya ringspot virus coat protein and is at least 110 nucleotides in length. The silencer DNA molecule is effective to achieve post-transcriptional gene silencing and is coupled to the fragment of a trait DNA molecule with the trait and silencer DNA molecules collectively imparting the trait to plants transformed with the DNA construct. Expression systems, host cells, plants and plant seeds containing the DNA constructs are disclosed. The present invention is also directed to imparting multiple traits to a plant by transforming a plant with a DNA construct of the present invention.]

IN THE TITLE:

DNA CONSTRUCTS AND METHODS TO IMPART [CONFER MULTIPLE TRAITS]  
RESISTANCE TO PAPAYA RINGSPOT VIRUS ON PLANTS

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (703) 308-5059. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at (703) 306-3218. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Customer Service at (703) 308-0198.

Anne R. Kubelik, Ph.D.  
October 31, 2003



AMY J. NELSON, PH.D.  
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